Methodology Development for CALSIM III Hydrology

Criteria 4:
Dependency on DSM2

About DSM2

- DSM2 is a 1-D model for simulating hydrodynamics, water quality, and particle tracking in a network of river or estuarine channels.

- It is used by DWR, USBR, and consultants, for historical and long-term planning studies related to the Delta.

DSM2 influencing CALSIM

- *CALSIM uses salinity constraints developed by a DSM2 based Artificial Neural Network (ANN).*

- *Special organic carbon constraints were developed based on DSM2 fingerprinting simulations for use in the In-Delta Storage work.*

CALSIM influencing DMS2

	Monthly CALSIM	Daily CALSIM
Sacramento	C169	C400
San Joaquin	C639	C644
Yolo Bypass	C157	C157
Eastside Streams	C504	C504
Calaveras	C508	Included in C644
Combined CCWD	D408	D408
Central Valley Project	D418	D418
State Water Project	D419	D419
North Bay Aqueduct	D403B	D403B
City of Vallejo	D403A	D403A
Delta Cross Channel Ops	Modified from CALSIM	DXC
Net Delta Consumptive Use	-	-
Net Delta Outflow (Martinez EC)	NDO	NDO
San Joaquin EC	VERNWQFINAL	From Monthly

Unmet DSM2 needs

- *DSM2 runs on 15-min. time step (CALSIM runs on monthly or daily time step).*

- *DSM2 uses 2 locations for CCWD intakes (CALSIM uses one – D408).*

- *Water quality / source water needed at other boundaries (CALSIM provides just net flows at the boundaries).*

Interfacing Opportunities

- *A daily CALSIM time-step would enable a better connection to DSM2 and possibly result in using DSM2 to estimate water quality constraints in CALSIM.*
    - *Regressions? / Coupled Models?*

- *Information on the point of origin of the water entering the DSM2 boundaries is important for water quality (DOC) simulations.*